

THE EFFECTS OF PARENT SEX ROLE, PARENT SEX,
INFANT SEX, AND TYPE OF ACTIVITY ON PARENT-
INFANT INTERACTIONS

BY

JAN CRAIG LEDERMAN

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INFANT INTERACTIONS

By

Jan Craig Lederman

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Recent research has indicated that parent-infant interaction has a significant effect on the development of the infant. The question of the factors that account for differences in parental behavior remains largely unanswered. Personality traits related to sex role might be related to parent-infant interaction. Only one study has attempted to determine if sex role affects social interaction with an infant and it was found that subjects of different sex types behaved differently while interacting with an infant. However, the subjects had little experience with infants and they were interacting with someone else's baby. Sex typing in parents may have a critical effect on parent-infant interaction, but this has yet to be explored.

The purpose of this study was to explore the effects of sex role in parents, sex of parent, sex of infants, and the type of activity on parent-infant interaction. The sample consisted of 66 white, middle SES

couples and their firstborn infants, recruited via local media and pediatricians. Mothers and fathers were videotaped individually for 3 minutes performing age-appropriate tasks with their infant at age 37, 43, and 49 weeks. Two trained raters coded the following parent behaviors: eliciting, initiating, directing, warming, correcting, accepting, and amplifying. Ratings of behavior by the coders on five of the seven behaviors were not reliable and only the hypotheses for directing and warming behaviors were analyzed further. At 43 weeks of infant age, the parents completed a sex role inventory to determine their sex roles. Data were analyzed using a 2 x 2 x 4 factorial design with 3 repeated measures to test the effect of infant sex, parent sex, and parent sex role (i.e., masculinity, femininity, androgyny, and undifferentiated) for each of 2 parent behaviors studied during three activity sessions. Univariate analyses of variance were calculated for each of the 2 parent behaviors. Duncan's multiple range tests were calculated to determine significant differences between means of dependent measures. Differences in parent behavior as a function of parent sex role, parent sex, and infant sex were not found. Results indicated differences in parent directing behavior with parents directing in different amounts depending on the activity. This difference seems to be a reflection of difficulty of the tasks with parents directing more during the difficult tasks. The finding shows the vital need for researchers to examine the context in which behavior is occurring as well as the reliability of their measures before results are generalized to other situations.

CHAPTER I
PROBLEM AND PURPOSE OF THE STUDY

Introduction

A complex cross current of activity exists between parent and infant. Recent research has indicated that parent-infant interaction has a significant effect on the development of the infant (Ainsworth, 1973; Clarke-Stewart, 1973). Differences in parent style of stimulation and responding to infants lead to differences in the cognitive and social-emotional development of the child (Gordon, 1974; Stayton, Hogan, and Ainsworth, 1971).

The question of the factors that account for differences in parental behavior remains largely unanswered. Parent sex has been shown to have a significant effect on the type of interaction between parents and infants, with fathers and mothers differing in their styles of responding (Lamb, 1976; Rebelsky and Hanks, 1971) and elicitation of attachment behavior (Yogman, Dixon, Tronick, Adamson, Als, and Brazelton, 1976). Yet it remains uncertain as to why parent sex is related to different types of behavior in parent-infant interaction.

A possible factor relating to sex differences in parent behavior is the personality traits associated with males and females. Traits typically associated with each sex include independence and aggression in males and emotionality and passivity in females (Bakan, 1966; Kagan, 1964; Kohlberg, 1966; Parsons and Bales, 1955). Aggression is a major sex typed behavior. Males are typically given freedom to express physical

and verbal aggression while females are not reinforced for aggressive expression. Males are "urged to be . . . independent in problem situations, sexually aggressive, in control of regressive urges, and suppressive of strong emotion," while females are "supposed to inhibit aggression . . . to be nurturant to others . . . and to maintain an affective, socially poised and friendly posture with others" (Kagan, 1964, p. 143). One can then expect males and females to exhibit different behaviors, including behaviors involving interaction with their children.

According to Kagan (1964) and Kohlberg (1966), highly sex typed persons try to keep their behavior consistent with their internalized perceptions of their sex role, whether masculine or feminine. These individuals are careful not to emit behaviors that are inappropriate to their sex type. Thus, strongly masculine or feminine personalities are likely to be hindered in their response capabilities. In a series of sex-appropriate and sex-inappropriate tasks, Bem and Lenny (1976) found that subjects who were highly sex typed experienced negative feelings when they engaged in cross sex behavior and, as a result, these individuals avoided these behaviors. As effective parenting requires nurturance and assertiveness, depending on the situation, it seems likely that highly sex typed individuals would be limited in their response capabilities while interacting with their child.

An either-or (masculine-feminine) conceptualization of sex role has become increasingly inadequate in light of a discovery of people who display a high level of both masculine and feminine characteristics; that is, "there exists a distinct class of people who can appropriately be termed androgynous, whose sex role adaptability enables them to engage

in situationally effective behavior without regard for its stereotype as masculine or feminine" (Bem, 1975, p. 643). Sex role androgyny represents sex role adaptability and individuals who are androgynous are capable of behaving assertively and aggressively as well as emotionally or passively, depending upon the demands and constraints of different situations. In addition, previous research has generally failed to consider the individual who is undifferentiated or indeterminate in his or her sex role. Undifferentiated persons describe themselves as low in both masculine and feminine personality traits (Spence, Helmreich, and Stapp, 1975).

Personality traits related to sex role might be related to parent-infant interaction. Only one study has attempted to determine if sex role affects social interaction with an infant. Bem and Lenny (1976) found that subjects of different sex types behaved differently while interacting with an infant. However, these subjects had little experience with infants and they were interacting with someone else's baby. Sex typing in parents may be a critical factor in the prediction of interaction between parents and infants, but this has yet to be explored.

Need for the Study

There exists a need to study factors contributing to parent behavior. Some important parent behaviors related to infant-parent interaction have been identified, including stimulation, responsiveness, acceptance of infant behavior, and ability to provide experiences for the infant that are appropriate to the age and ability of the infant (Bell and Ainsworth, 1972; Clarke-Stewart, 1973; Gordon, 1974; Lewis and Goldberg, 1969). Factors accounting for these differences in parental behavior have not been identified in the existing literature on parent-infant interaction.

Differences in parental sex typing might account for some of these differences. Highly sex typed parents might be limited in their behavioral interaction with their infant while androgynous individuals would theoretically engage in both masculine and feminine typed behaviors, thus providing a more effective environment for their infant.

Educational Implications

There are no studies in the literature on parent-infant interaction which examine the issue of sex role typing in parents as it affects the interactions that parents have with their infants. Parental sex typing may be a significant factor affecting parent behavior. Differences due to culture, conditioning, and stereotyping of behavior in males and females may be more important than biological sex differences in determining parent-infant interaction.

The implications for parent education and the development of effective parenting skills could be far reaching. Rigid sex typing might inhibit or otherwise discourage flexibility in parents, limiting the nature and variety of parental interaction with their infant. Consequently, the development of the infant might be affected should rigid sex typing in parents result in restrictions in responding to their infant.

Effective parenting may require an androgynous personality due to the complexity of the demands, constraints, and opportunities involved in being an effective parent. Androgynous personalities who can be assertive and yielding, aggressive and passive, independent and nurturant, might become this society's model parents. Androgynous personalities might be more readily capable of responding to meet the challenges of the ultimate responsibility of being a parent.

Purpose

The purpose of this study is to investigate the effect of sex role of parents (i.e., masculine, feminine, androgynous, undifferentiated), sex of parents, and sex of infants on seven different parent behaviors observed during three structured play settings.

Objectives

To determine if sex typing in parents affects parent behavior as parents interact with their infant.

To determine if parent sex affects parent behavior as parents interact with their infant.

To determine if infant sex affects parent behavior as parents interact with their infant.

To determine if type of activity session affects parent behavior as parents interact with their infant.

CHAPTER II REVIEW OF THE LITERATURE

Introduction

The nature of parent-infant interaction is complex. Research has shown that behavior of parents while interacting with infants is affected by sex of the parent, sex of the infant, and the type of activity in which the interaction is occurring. Sex role of parents apart from these other factors may also affect parent-infant interaction but this remains to be explored. The pertinent literature which is reviewed in this chapter presents a rationale for a study of the effect of parent sex, infant sex, activity, and sex role of parents on the behavior of parents interacting with their infants.

Parent Sex

Current research in the area of infant development has demonstrated that parent-infant interaction plays a crucial role in the development of the infant's competence (Kotelchuck, 1973; Lewis and Weinraub, 1974). An extremely elaborate and intricate interrelationship develops between parent and child and Sameroff (1975) stresses the need for parents to become aware of the complexity of their interactions with their child. Studies have consistently revealed that desirable parental behaviors include intimate, firm, yet gentle handling by the parents (Ainsworth, Bell, and Stayton, 1974; Lewis and Goldberg, 1969). Stimulation, responsiveness, acceptance of infant behavior and proficiency in providing appropriate activities for an infant's ability and age have also been

found to be important characteristics in parents (Bell and Ainsworth, 1972; Gordon, 1974; Kagan, 1971). Other parent behaviors found to have an effect on infant competence include the ability to give the infant a warm, nurturant environment, ability to communicate and respond reciprocally, and the ability of parents to provide social stimulation for their infant (Clarke-Stewart, 1973).

It is less well understood as to which factors affect optimal parental behavior. Sex of the parent has been shown to be a significant contributor to differences in parent-infant interaction (Cohen and Campos, 1974; Moss, 1967; Rebelsky and Hanks, 1971; Yogman, Dixon, Tronick, Adamson, Als, and Brazleton, 1976). Two studies have shown that mothers were superior to fathers in the elicitation of attachment behavior (e.g., infant wanting to be held or comforted) in their babies (Cohen and Campos, 1974; Yogman, Dixon, Tronick, Adamson, Als, and Brazleton, 1976). Two studies have shown that fathers and mothers vocalize differently with male and female infants (Moss, 1967; Rebelsky and Hanks, 1971). While sex of the parent has been shown to result in different parent behavior, it is less clear as to whether it is biological sex or personality traits associated with sex, or both, that affect the behavior of parents.

Researchers have focused primarily on the relationship between mother and her baby, for it has been assumed that the mother-infant relationship is unique and that this relationship serves as the foundation for future social relationships (Ainsworth, 1973; Bowlby, 1969). Research supports the importance of maternal involvement with her infant. Social behavior of the mother in response to her infant,

i.e., playing and talking, has been shown to relate to scores on the Bayley Scale of Mental Development, according to Clarke-Stewart (1973). Increased maternal sensitivity, awareness of and responsiveness to infant signals affects scores on the Griffiths and Bayley indices (Ainsworth, 1973; Stayton, Hogan, and Ainsworth, 1971). Eye contact between mother and infant also relates to and enhances attachment (Ainsworth, 1973; Goldberg and Lewis, 1979; Moss and Robson, 1967). A warm attachment to the mother has been shown to facilitate the acquisition of object permanence in 8½-month-old infants (Bell, 1970).

While there is no question as to the importance of the mother-infant relationship, recent research has shown that the father as well, plays a crucial role in the development of infant competence. According to Pedersen, Rubenstein, and Yarrow (1973), 5- and 6-month-old infants were more alert, responsive, and interested in their environment, as a function of the amount of time the infants spent interacting with their fathers. Nurturance from fathers has been shown to relate to intellectual competence in white, middle SES preschool male children (Radin, 1973).

Attachments form between infants and both parents (Kotelchuck, 1973), although the relationships a mother and father have with their infant are qualitatively different (Lewis and Weinraub, 1974). Lamb (1976, 1977) observed that fathers played more physical rough and tumble games with their 7- and 8-month-old infants than did their mothers. Mothers were observed to hold the infant much more than fathers but usually for caregiving or controlling infant behavior. When the fathers held the baby, it was usually to play. Kotelchuck (1973) reported that only a quarter of the 144 fathers he interviewed had routine caregiving tasks for their 9- to 12-month-old infants. In a study by Biller (1974),

fathers were observed to encourage infant curiosity as well as cognitive and motor tasks. Mothers were seen as inhibiting infant exploration. Fathers, then, are vigorous, playful, and encouraging of exploration in their babies while mothers seem to be more caregiving, nurturant, and controlling in relationships with their infant. Thus, it seems that the mother, acting out the traditional feminine role, provides the child with needed care and nurturance but fails to encourage behaviors that may contribute to the development of competence, that is, exploratory, independent behavior. The father carries out the traditional masculine role by providing vigorous, active stimulation, but fails to involve himself in caregiving functions. Perhaps the differences in parent-infant interaction that researchers attribute to sex of parent may actually be due to traditional sex role stereotyping rather than sex of parent per se.

Sex Role of Parent

Traditional sex role stereotypes taught to males and females in our culture may inhibit the development of behaviors that would enable both parents to respond optimally to their infant. According to Kohlberg (1966) and Kagan (1964), highly sex typed individuals try to keep their behavior consistent with their internalized perception of their sex role, whether masculine or feminine. Strongly masculine or strongly feminine parents may actually be hindered in their response capability when behaving with their child. Data indicate that rigid sex role stereotypes reduce effectiveness in personality and behavioral characteristics of women and men. Strongly stereotyped individuals may have emotional problems. For example, low self-esteem and social acceptance and higher anxiety have been found in highly feminine females (Consentino and Heilbrun, 1964; Gall, 1969; Gray, 1957; Sears, 1970; Webb, 1963). Low

self-acceptance and high neuroticism and anxiety have been found in males who are high in masculinity (Harford, Willis and Deabler, 1967; Mussen, 1962). Individuals who are highly sex typed may have personality disadvantages attributable to being highly sex typed.

Masculinity and Femininity

In traditional personality theory, masculinity and femininity are described as "relatively enduring traits which are more or less rooted in anatomy, physiology, and early experience, and which generally serve to distinguish males from females in appearance, attitudes, and behavior" (Constantinople, 1973, p. 390). The masculine-feminine continuum is characterized as ranging from aggression (i.e., individual assertiveness, rationality, strength, instrumentality, agenic personality) to passivity (i.e., emotionality, expressiveness, nurturance of others, yielding personality) as described by Bakan (1966) and Bem (1974). Masculinity is also conceived of as goal directed behavior while femininity is seen as affective and supportive behavior (Parsons and Bales, 1955). Researchers have supported the instrumental-expressive dimension (masculine - feminine) by describing males as dominant and females as sensitive and noncompetitive (Johnson, 1963).

Historically, masculinity and femininity have been described as bipolar concepts lying on the opposite ends of a single continuum (Berdie, 1959; Goodenough, 1946; Hathaway and McKinley, 1943; Heilbrun, 1964; Reece, 1964; Strong, 1936; Terman and Miles, 1936). Such a continuum has opposite end points with masculinity and femininity at the opposite ends (English and English, 1958). Inherent in a bipolar conception of masculinity and femininity is the assumption that the opposite of a

feminine behavior would necessarily be a masculine behavior. Among researchers who have based their conception of masculinity and femininity on such a single bipolar continuum are Terman and Miles (1936) in their Attitude Interest Analysis Test, Strong (1936) in his Strong Vocational Interest Blank, Hathaway and McKinley (1943) in the Minnesota Multiphasic Personality Inventory (MMPI), and Gough (1952) in the development of his Femininity (Fe) Scale.

Carlson (1972) warned that it may be an oversimplification to view the complex dualities of masculinity and femininity as opposite ends of a single bipolar dimension. As a result of a factor analysis, Lunneborg (1972) concluded that masculinity - femininity is not "the unidimensional, mythical belief popularly held" (p. 317). This is understandable in that "the universe of known sex differences is large indeed, and it is not unreasonable to expect that these dimensions reflect more than one underlying dimension" (Constantinople, 1973, p. 398).

The major criticism of bipolar measures of masculinity and femininity is that subjects are classified as being either masculine or feminine, and, as a result, researchers are unable to determine whether a subject is capable of exhibiting both masculine and feminine typed traits.

With traditional measurements viewing masculinity and femininity at opposite ends of a single bipolar dimension, subjects are classified or typed either as sex appropriate (i.e., masculine if male, feminine if female) or as sex inappropriate (e.g., deviant, maladjusted, confused, etc.). On the basis of such a single bipolar system one cannot possibly be viewed as having both masculine and feminine traits, i.e., androgynous or, conversely, neither set of traits, i.e., undifferentiated or indeterminate. Were masculinity and femininity to be viewed as two distinct and

independent dimensions of behavior one could then be characterized as androgynous, i.e., both masculine and feminine, instrumental and expressive (Parsons and Bales, 1955), assertive and yielding (Bem, 1974), or agenic and communal (Bakan, 1966; Block, 1973; Carlson, 1971), or neither, i.e., undifferentiated.

Researchers have been moving in the direction of viewing masculinity and femininity as two separate dimensions. A factor analysis of responses to the Emotional and Ethical Attitudes and Interests Exercises on the Terman and Miles (1936) Attitude Interest Test led researchers to conclude that masculinity and femininity are not parts of one unitary trait (Ford and Tyler, 1952). Spence, Helmreich, and Stapp (1974) concluded from work with the Sex Role Stereotype Questionnaire that there is support for the view that masculinity and femininity are separate components present in males and females. In view of such a finding, separate masculinity and femininity scales (MSC & FMN) from the California Psychological Inventory (CPI) were constructed in order to allow for independent measurements of a person's masculinity and femininity (Baucom, 1976). Other researchers have supported the notion that masculinity and femininity are mutually exclusive and orthogonal domains of behavior (Bem, 1977; Block, 1973; Carlson, 1971; Constantinople, 1973; Jenkin and Vroegh, 1969; Spence, Helmreich and Stapp, 1975). On the basis of a factor analysis of the Bem Sex Role Inventory (Bem, 1974), it was concluded that "the conceptualization of these traits as two separate dimensions rather than a single bipolar dimension is a step in the right direction" (Gaudreau, 1977, p. 302).

Androgyny

Researchers have found that androgyny as a personality attribute contributes to one's adaptability. On the Personality Attributes Questionnaire, it was found that subjects who have an androgynous self-concept are higher in self-esteem than those with a masculine or feminine self-percept (Spence et al. 1975). In a similar study, Wiggins and Holzmuller (1978) found that subjects high in both masculinity and femininity were also higher in level of self-esteem than subjects with other sex typings. Androgynous individuals have the maturest level of moral judgements, according to Block (1973), and androgynous individuals are more socially poised and higher in intellectuality than undifferentiated types, with masculine and feminine typed individuals in between (Berzins, 1975).

In an attempt to validate the measurement of androgyny with the Sex Role Inventory (Bem, 1975), a group of 42 undergraduates was chosen to rate a list of 12 activities on a 7-point scale as to how masculine or feminine these activities are in the view of American society. Playing with a 6-week-old kitten was rated as feminine and "saying what you believe, even when you know those around you disagree" (p.636) was rated as masculine. Fifty-four additional subjects were chosen to participate in a standard conformity paradigm. Of these subjects, 27 were male and 27 were females, with 9 of each sex being androgynous, masculine, or feminine. Results indicated that masculine and androgynous subjects were less likely to conform than feminine subjects with no differences between the masculine and androgynous subjects. On the kitten activity, males who were androgynous and feminine became significantly more involved with the kitten than did masculine males, with no differences between feminine and androgynous males.

Feminine females were significantly less involved with the kitten than androgynous females.

Bem (1977) hypothesized later that interacting with a kitten might not be a good indicator of feminine playfulness and that a human subject (i.e., infant) might be more likely to elicit feminine behavior. That androgynous personalities are more flexible in their behavioral repertoires was confirmed in that androgynous personalities exhibited both a high level of feminine interaction with the kitten as well as a high level of masculine independence when under pressure to conform (Bem, 1975).

In order to provide optimal parenting, it is possible that parents may need to adopt more flexible styles of responding than our society's traditional sex role stereotypes permit. Research by Bem, Martyna, and Watson (1976) provides support for the hypothesis that sex typing may affect interactions with an infant. Bem selected 42 females and 42 male undergraduates to interact with an infant. Subjects were selected to provide a sample of one-third masculine, one-third feminine, and one-third androgynous individuals. Androgyny was defined as an equal self-endorsement of masculine and feminine traits. Babies, aged 4½- to 7-months, were dressed in neutral clothing and randomly assigned as 'David' or 'Lisa'. Subjects were placed with the infant for 10 minutes behind a one way mirror and behavior of the subjects was sampled every 10 seconds. The behaviors which were sampled included the following:

Was the subject smiling directly at the baby? Was the subject holding the baby chest to chest? Was the subject stimulating the baby in a way that involved touching (e.g., tickling, patting, stretching)? Was the subject stimulating the baby in a way that did not involve touching (e.g., shaking a rattle, squeaking a toy)? (p. 1018)

Intercoder agreement reached 90% between 2 independent coders for each behavior.

Results showed that masculine individuals were significantly less nurturant toward the baby than were feminine or androgynous subjects and that there were no differences between androgynous and feminine subjects. These subjects, however, were interacting with someone else's baby, and they also had little experience with infants.

Parents interacting with their own infants may also be similarly affected by their sex roles in their interaction with their child. Research is needed to determine if the sex role of the parent, considered in addition to the parent's biological sex, is related to the parent's style of responding to the infant.

Infant Sex

Parent-infant interaction is a complex interrelationship with the parent and the infant significantly contributing to the nature of the interaction (Bell, 1970; Sameroff, 1975). It is not likely that parent sex or sex roles alone influence the interaction. Research has demonstrated that sex of the infant is also a critical factor in determining parent-infant interaction. For example, Moss (1967, 1974) found that male infants cried more and slept less than female infants at age 3 months. Females were more likely to quiet themselves while males were reported as being more difficult to calm. In response to behavioral differences in male and female infants, mothers responded differently and more frequently to male infants during the early months when males seemed fussier. Mothers handled, attended, and gazed at their sons more than did mothers of girls. Mothers stimulated their sons with visual and

auditory signals in addition to physical contact, but calmed daughters with more social stimuli, i.e., imitation of vocalization and talking. Also mothers initiated more vocalization with females than with males. Mothers interacted more with males in an effort to calm them. Lewis (1972) noted that in the first few months of life, male infants receive more proximal stimulation (e.g., touching) from parents while females receive more distal stimulation (e.g., verbalization). Goldberg and Lewis (1969) found that mothers talked and engaged in more physical contact with daughters than sons as they became older. In summary, sex of the infant has been shown to affect parental behaviors in response to their infant and should be considered in an analysis of parent-infant interaction.

Situation

The effects of the situational aspects of parent-infant interaction have been largely ignored in the literature on child development (Freedle, 1976). The type of situation in which activity occurs should be viewed as a dynamic system involving purposes and goals of the researcher, the subject's perception of the situation, and the given activity. More caution needs to be exerted in terms of generalizability of findings with due consideration being given to aspects of the situation (Magnusson, Gerzen, and Nyman, 1968). Research that has failed to consider the type of situational contexts in which behavior is occurring may have questionable validity in that the situation may contribute significantly to variability in parent-infant behavioral interactions.

Several studies have shown the importance of the situation and its effect on behavior. For example, Lewis and Freedle (1973) pointed out that the situation affected the transitional probability of mother-infant vocalizations when the infant was 3 months old. In a summary of 11 articles published between 1959 and 1973 examining the relative effects of personological and situational aspects on behavior, Bowers (1973) reported that the mean percentage of variance due to the person-by-situation interaction was 20.77% in comparison to 12.71% due to persons and 10.17% due to situation.

Moos (1969) pointed out that behavior is susceptible to situational effects. Additionally, should a behavior be affected by the context of the activity and/or situation, it cannot be assumed that other behaviors, given the same context, would be affected similarly. Thus, situation must be considered as a potential source of variability in any study of parent-infant interaction.

Summary

Researchers have noted that parent behavior is affected by sex of the parent, sex of the infant, and the context in which behavior is occurring. With regard to parent sex, fathers seem to be vigorous and playful with their infants as well as encouraging of infant exploration while mothers are seen as more nurturant, caregiving, and controlling (Lamb, 1976, 1977; Biller, 1974). While parent sex does seem to result in different behavior, it is unclear as to whether it is biological sex or personality traits associated with sex that affects the parent's behavior.

Personality traits associated with sex role might be related to parent-infant interaction, but this has gone unexplored in the literature on parent-infant interaction. Highly sex typed parents might be limited in their behavioral interactions with their infant, while individuals who are both masculine and feminine (i.e., androgynous) or neither masculine nor feminine (i.e., undifferentiated or indeterminate) might be affected in their behavioral interactions with their infants in ways that are as yet unexplored. Sex of the infant has also been shown to affect parental responses to the infant with males and females being treated differently (Lewis, 1972; Moss, 1974). Finally, the situational aspects involved in a given activity also affect parent-infant interactions (Bowers, 1973; Lewis and Freedle, 1973; Moos, 1969), and this aspect of parent-infant interaction should also be considered in the research.

CHAPTER III METHODOLOGY

This study investigated the effect of sex role of parents, sex of parents, and sex of the infant on parent behavior in three structured play situations with their infant. The data in this study were collected as part of the Parent-Infant Transactions and Infant Competence Project (Gordon and Soar, in progress). The study was sponsored by the National Institute of Mental Health (Grant No. 1 R01 27480-01) and conducted at the University of Florida Institute for Development of Human Resources, Gainesville, Florida. The study was funded from March, 1976, until August, 1978.

Null Hypotheses

1. There are no differences in parent eliciting behavior as a function of parent sex role, parent sex, infant sex or type of activity.
2. There are no differences in parent initiating behavior as a function of parent sex role, parent sex, infant sex or type of activity.
3. There are no differences in parent directing behavior as a function of parent sex role, parent sex, infant sex or type of activity.
4. There are no differences in parent warming behavior as a function of parent sex role, parent sex, infant sex or type of activity.
5. There are no differences in parent correcting behavior as a function of parent sex role, parent sex, infant sex or type of activity.
6. There are no differences in parent accepting behavior as a function of parent sex role, parent sex, infant sex or type of activity.
7. There are no differences in parent amplifying behavior as a function of parent sex role, parent sex, infant sex or type of activity.

Sample

The sample was recruited through local commercial and public television, radio, newspapers, and pediatricians. It consisted of 66 white, middle SES married parents of first born infants who fell within the normal range of physical health as diagnosed by examination at 3 months of age. There were 20 male and 13 female infants. The Two-Factor Index of Social Position (Hollingshead, 1957) was used to determine familial socio-economic status. All parents were natural born Americans. Mean age for fathers was 28.6, standard deviation, 4.04. The mean age for mothers was 26.4, standard deviation, 2.94.

Procedure

The first contact with each family recruited was usually a phone conversation when families called the Institute for Development of Human Resources in response to advertisement. Families were screened according to the criteria outlined on the Questionnaire for Parents (Appendix 1). Only Caucasian, middle SES first time parents with a commitment to one year of involvement with the project were eligible. If eligible, a home visit followed. After consent forms were signed, families were instructed to arrange for a project funded physical examination for their infants with a pediatrician of their choice. The first taping was scheduled to occur approximately one week after the physical examination.

The University of Florida Institute for Development of Human Resources provided a permanent studio for taping. A 12' by 12' enclosed area, set up within a larger room, was the area designated for recording of parent-infant interaction. Three cameras, monitors, mixer, and 2 video tape recorders were used to record the behavior. Three lens size holes were cut in the walls of the enclosed area for the cameras.

Each of the 33 families participated in seven audio-video taping sessions beginning at infant age 13 weeks and continued every 6 weeks until the infant reached 49 weeks of age. At the beginning of a session, parents were given a set of written descriptions of a task adopted from Baby Learning Through Baby Play (Gordon, 1970). Tasks were designed to be appropriate for the infants based on their age. Seven different tasks were presented, one for each of the sessions. All families participated in the same age-appropriate tasks. Having read the instructions, parents were asked to perform the task with their infant. The data from the activity sessions at 37, 43, and 49 weeks were used in this study (Appendix 2, 3, and 4). During the 37 week activity session (Occasion 5) parents and infants participated in a hide-and-seek activity. During the 43 week activity session (Occasion 6) parents and infants participated in a blocks activity. During the 49 week activity session (Occasion 7) parents and infants participated in a buttons-in-a-jar activity.

Each taping session consisted of a total of 9 minutes of activity taping, 3 minutes with mother and infant, 3 minutes with father and infant, and 3 minutes with both parents and infant. The order of taping was randomly distributed. The tapes of mother and father individually interacting with their infant were used in this study.

Parents were asked to complete the Bem Sex Role Inventory (See Appendix 5) at the conclusion of the 43 and 49 week taping sessions. The BSRI was administered twice for purposes of determining its reliability over a 6-week period. The data from the 43 week administration of the BSRI were used as the index of parent sex roles. The sample of the fathers was as follows: masculine, 17; feminine, 5; androgynous, 6; undifferentiated, 5.

The sample of the mothers was as follows: masculine, 1; feminine 18; androgynous, 9; undifferentiated, 5.

Measures

Reciprocal Category System

Parent behaviors were analyzed through systematic observation. The observation system used was a modification of the Reciprocal Category System (RCS) developed by Ober (1968) for use in analysis of teacher-student interactions. The form of the RCS used was a slight revision of the RCS developed by Gordon and Jester (1972) for the analysis of parent-infant interactions. Project staff who were familiar with parents and infants developed the behavioral descriptions for each category.

Trained raters observed video taped recordings of parent-infant interactions. A minimum of every 3 seconds, the behavior and the behavior were noted according to the numerical structure of the system (See Appendix 6). Each notation consisted of a two digit number. The first number identified who was behaving and the second digit indicated which behavior was occurring. For example, an 11 would indicate "mother warms", while a 24 would indicate "father elicits". Only verbal behaviors of parents are coded on the RCS. Infant behavior descriptions similar to the parent categories were also recorded (e.g., 01 for infant warms, 04 for infant elicits). Thus, a continuous record of behavior between parent and infant was made.

Infant-parent behaviors were grouped into seven categories, one for each of the parent behaviors studied. Parent behaviors included eliciting, initiating, directing, warming, correcting, accepting, and amplifying. Raw data from the RCS were assumed not to meet the assumptions of the

statistical procedures involved in this study. Data gathered, therefore, were area transformed into T-scores to yield as normal a distribution as possible.

Coding of behavior was done by salaried, part-time University of Florida undergraduates who were trained by project personnel prior to actual coding. One coder majored in Early Childhood Education and the other in Psychology. On the issue of reliability Medley and Mitzel (1963) describe a coefficient of observer agreement as the correlation of observations between two raters at the same time. A stability coefficient is described as the correlation of one rater on two different occasions. A reliability coefficient is the correlation of ratings by different coders on different occasions. In order to determine the reliability of coder observations according to the definition of reliability of Medley and Mitzel (1963), 24 families were observed on 2 different occasions by 2 different coders and a Pearson correlation analysis was calculated. Results show that there was very little reliability of the RCS measures (See Table 1) with five out of seven behaviors having near-zero coefficients. Only two of seven measures, directing and warming behaviors reached the .05 level of significance and were considered adequate for further analysis.

Pearson product moment correlations of the seven parent behaviors with each other on each of the three occasions were found to be very low (See Tables 2, 3, 4), ranging from $-.234$ to $.507$ with 52 out of 63 correlations having a value of $.2$ or less. If the correlations between the behaviors had been higher, multivariate analysis of variance would have been warranted. However, the seven parent behaviors show very little interrelationship and are analyzed by univariate analysis of variance.

Table 1

RCS Reliability Correlation Coefficients and
 Prob > (R) Under $H_0: \rho = 0$
 N = 48

	X1	X2	X3	X4	X5	X6	X7
X1 Eliciting	-.047* .749**	-.028 .847	-.144 .326	.201 .170	-.021 .887	-.049 .740	.165 .261
X2 Initiating	-.040 .786	-.075 .611	.012 .936	-.129 .379	-.009 .951	-.068 .645	-.121 .410
X3 Directing	.093 .530	.049 .739	.289 .046	.016 .916	-.027 .854	-.077 .601	.034 .818
X4 Warming	-.196 .181	.060 .683	.194 .185	.308 .033	-.257 .078	.114 .439	.010 .946
X5 Correcting	-.065 .663	-.169 .250	-.259 .075	-.276 .057	.001 .993	-.137 .353	-.047 .751
X6 Accepting	.084 .572	.107 .468	-.135 .361	.178 .227	-.134 .365	.080 .587	-.015 .921
X7 Amplifying	-.221 .131	-.023 .878	.001 .996	-.056 .706	-.027 .858	-.271 .062	-.044 .766

*Correlation between one coder on Session 5 with a different coder on Session 6 is listed first.

**Level of significance listed below each correlation.

Table 2

Pearson Product Moment Correlation Coefficients of RCS Behaviors
Session 5 (37 Weeks)

	Elicits	Initiates	Directs	Warms	Corrects	Accepts	Amplifies
Elicits	1.000	.109	.022	.059	.102	.206	.149
Initiates		1.000	-.096	.187	-.089	-.045	-.005
Directs			1.000	-.040	.332	.110	-.050
Warms				1.000	.089	.074	.152
Corrects					1.000	-.116	.062
Accepts						1.000	.126
Amplifies							1.000

Table 3

Pearson Product Moment Correlation Coefficients of RCS Behaviors
Session 6 (43 Weeks)

	Elicits	Initiates	Directs	Warms	Corrects	Accepts	Amplifies
Elicits	1.000	.277	.099	.178	.039	.233	.122
Initiates		1.000	-.177	.143	.143	.005	.302
Directs			1.000	.003	.310	.186	.067
Warms				1.000	.002	.028	.507
Corrects					1.000	.014	.072
Accepts						1.000	-.093
Amplifies							1.000

Table 4

Pearson Product Moment Correlation Coefficients of RCS Behaviors
Session 7 (49 Weeks)

	Elicits	Initiates	Directs	Warms	Corrects	Accepts	Amplifies
Elicits	1.000	.110	.067	-.090	-.047	.144	.359
Initiates		1.000	-.178	.091	-.064	-.080	-.009
Directs			1.000	-.095	.313	.296	.100
Warms				1.000	.008	-.234	.145
Corrects					1.000	.105	.225
Accepts						1.000	-.076
Amplifies							1.000

Bem Sex Role Inventory

The second instrument used in this study was the Bem Sex Role Inventory (Bem, 1974). The BSRI (See Appendix 5) is recognized as the measure of androgyny having received the "most experimental attention and validation" (Kelly and Worell, 1977, p. 1103). The Bem Sex Role Inventory has independent Masculinity and Femininity Scales, as well as an index of social desirability, each containing twenty adjectives. Subjects are asked to rate themselves on a scale from 1 ("never or almost never true") to 7 ("always or almost always true") on the 60 adjectives contained in the inventory. According to how they rate themselves, subjects are scored as masculine, feminine, both (i.e., androgynous), or neither (i.e., undifferentiated or indeterminate). According to Bem (1974), "the Masculinity and Femininity scores indicate the extent to which a person endorses masculine and feminine personality characteristics as self descriptive" (p. 158).

Construction of the BSRI

In constructing the BSRI, Bem identified 200 traits having either a masculine or feminine tone as well as being "positive in value" (p. 156). The traits were rated from 1 ("not at all desirable" for men or women) to 7 ("extremely desirable" for men or women) by 100 Stanford undergraduates (50 males and 50 females). Personality traits "were selected as masculine or feminine on the basis of sex-typed social desirability..." (p. 155). Masculine traits selected for the inventory were those rated by both females and males as being more appropriate for men than women ($p < .05$). Feminine traits were rated by both males and females as being more appropriate for women ($p < .05$).

Originally, an Androgyny score reflected the relative equality in numbers of masculine and feminine traits that persons included in their self description. Bem derived the Androgyny score by using a T-ratio to determine the difference in self-endorsement of masculine and feminine traits. This enabled the researcher to determine if a respondent characterized himself or herself as significantly more feminine, significantly more masculine, or approximately equal in the endorsement of masculine and feminine traits (androgynous). An androgynous personality would have a non-significant T-ratio ($T < 1$, n.s.), indicating that relatively equal amounts of masculine and feminine traits were endorsed, regardless of the number of traits endorsed. According to Kelly and Worell (1976), "persons whose self-definition restricts both masculinity and femininity (low masculinity-low femininity) would be apt to have few positively valued behavioral alternatives in situations requiring these response capabilities" (p. 1103-1104). Several researchers have challenged Bem's method of defining androgyny--as it fails to distinguish between persons who endorse a large number of both masculine and feminine traits and persons who endorse only a few of each (Baucom, 1976; Heilbrun, 1976; Kelly, Caudill, Hathorn and O'Brien, 1977; Kelly and Worell, 1976). Spence et al. (1975) suggested that subjects be divided at the median on their masculinity and femininity scores to form a quadripartite system with four quadrants: high masculine/high feminine (androgynous), high masculine/low feminine (masculine typed), low masculine/high feminine (feminine typed), and low masculine/low feminine (undifferentiated or indeterminate). This procedure permits subjects to be divided into androgynous and undifferentiated groupings according to their level of endorsement of masculine and feminine traits.

Bem (1977) agreed that there are differences between high and low scorers and only subjects who score above the median of their population sample in both masculinity and femininity should be classified as androgynous. Subjects who score below both medians are classified as undifferentiated. Subjects who are above the median in masculinity and below the median in femininity are classified as masculine. Those above the median in femininity and below it in masculinity are labeled as feminine.

Psychometric Analysis of the Bem Sex Role Inventory

To provide data on the psychometric properties of the BSRI, Bem (1975) administered the inventory to 723 male and female psychology students at Stanford University. An additional sample of 194 male and female subjects was gathered from Foothill Junior College. Scores for masculinity and femininity were found to be empirically independent in the Stanford sample (male $r = .11$; female $r = -.14$); and in the Foothill sample (male $r = -.02$; female $r = -.07$). A retest of 28 males and 28 females approximately 4 weeks after the first administration resulted in high product moment correlations (Masculinity $r = .90$; Femininity $r = .90$). Internal consistency was estimated by calculating coefficient alpha for the Masculinity and Femininity scales of each sample: Masculinity $\alpha = .86$; Femininity $\alpha = .82$ for the Foothill sample.

To determine the test-retest reliability of the BSRI in this study, the BSRI was administered to parents at the conclusion of the 43- and 49-week activity sessions. This was done in order to determine the reliability of the BSRI over a 6-week period. Pearson product moment correlations for the BSRI administered at the 43- and 49-week sessions were $r = .85$ ($p < .001$) for masculinity and $r = .75$ ($p < .001$) for femininity (See Table 5).

Table 5

Product Moment Correlations of BSRI Self-Masculinity and Femininity
Scores for Sessions 6 (43 Weeks) and 4 (49 Weeks)

Variable	SM6	SF6	SM7	SF7	Mean	Standard Deviation
SM 6	1.000	-.3142	.8483	-.1938	4.9772	.7718
SF6		1.000	-.2469	.7538	4.8263	.5627
SM7			1.000	-.0525	4.9895	.6928
SF7				1.000	4.9211	.5539

Analysis

The general Linear Model Procedure of the Statistical Analysis System (Barr, Goodnight, Sall, and Helwig, 1976) was used for calculation of the analysis of parent behavior. The Northeast Regional Data Center on the University of Florida campus provided computer facilities for all analyses

Data were analyzed using a 2 x 2 x 4 factorial design with 3 repeated measures (Winer, 1962). The 2 x 2 x 4 factorial design consisted of infant sex crossed with parent sex, and parent sex crossed with levels of sex role. The activity sessions were the repeated measures. Families were nested within combinations of infant sex, parent sex and parent sex role across the 3 repeated measures. Univariate analyses of variance were calculated for each of the 2 parent behaviors.

Hypotheses of repeated measures were analyzed with Type IV MS for residual error. Hypotheses of nested effects were analyzed with Type IV MS for family within infant sex x parent sex x sex role as the error term. Duncan's multiple range tests were calculated to determine significant differences between means of dependent measures.

Type IV Sums of Squares were calculated due to an empty cell resulting from the absence of masculine mothers of female infants, and the unequal numbers of subjects within the remaining cells (Goodnight, 1976).

CHAPTER IV RESULTS

Introduction

The results of the Analyses of the effect of parent sex role, parent sex and infant sex on parent behavior in three structured play situations are reported in this chapter. Analyses of variance were calculated for each of the two parent behaviors. When the F-ratio was significant at the .05 level, Duncan's multiple range tests were executed to identify the significant pairwise differences among the means.

Hypothesis 1

It was hypothesized that there would be no differences in parent directing behavior as a function of parent sex role, parent sex, infant sex, or the type of activity in which parents were involved with their infant. Results of the analysis of variance for parent directing behavior are presented in Tables 6 and 7. The analysis revealed a significant main effect for occasion ($F(2, 102) = 23.74, p < .0001$). The Duncan's multiple range test (Table 8) used to evaluate the differences between the activity occasions revealed significant differences ($p < .05$) between the amounts of directing behavior occurring during Occasion 7 (mean = 54.86), Occasion 6 (mean = 50.17), and Occasion 5 (mean = 44.02). The main effects for parent sex role, parent sex, and infant sex were not significant.

TABLE 6
Analysis of Variance of
Parent Directing Behavior

Source	df	SS	MS	F	p
Treatment	95	14714.59	154.89	3.09	.0001
Error	102	5116.26	50.16		
Total	197	19830.95			

Mean = 49.68

Standard Deviation = 7.08

R-Square = .742

TABLE 7
Directing
Tests of Hypotheses of Repeated Measures
Using Type IV MS for Residual Error

Source	df	Type IV SS	F	p
Occasion	2	2381.56	23.74	.0001
Infant Sex x Occasion	2	76.25	.76	n.s.
Parent Sex x Occasion	2	131.00	1.31	n.s.
Infant Sex x Parent Sex x Occasion	2	70.82	.71	n.s.
Occasion x Sex Role	6	182.44	.61	n.s.
Infant Sex x Occasion x Sex Role	6	291.46	.97	n.s.
Parent Sex x Occasion x Sex Role	6	51.29	.17	n.s.
Infant Sex x Parent Sex x Occasion x Sex Role	4	380.37	1.90	n.s.
Tests of Hypotheses of Crossed Effects Using The Type IV MS for Family Within Infant Sex x Parent Sex x Sex Role as Error Term				
Infant Sex	1	51.74	.57	n.s.
Parent Sex	1	66.26	.74	n.s.
Sex Role	3	32.77	.12	n.s.
Infant Sex x Parent Sex	1	2.59	.03	n.s.
Infant Sex x Sex Role	3	328.31	1.22	n.s.
Parent Sex x Sex Role	3	199.72	.74	n.s.
Infant Sex x Parent Sex x Sex Role	2	320.51	1.78	n.s.

TABLE 8

Duncan's Multiple Range Test For Variable Directs

	OCCASION		
	5	6	7
N	66	66	66
Mean	<u>54.86</u> *	<u>50.17</u>	<u>44.02</u>
F (2, 102) = 23.74, p < .001			

*Means not connected by underline differ significantly.

Hypothesis 2

It was hypothesized that there would be no differences in parent warming behavior as a function of parent sex role, parent sex, infant sex, or the type of activity in which parents were involved with their infant. Results of the analysis of variance for parent warming behavior are presented in Tables 9 and 10. Results showed effects for parent sex role, parent sex, infant sex, and the type of activity were not significant.

TABLE 9

Analysis of Variance of Parent Warming Behavior

Source	df	SS	MS	F	p
Treatment	95	7470.89	78.64	1.70	.004
Error	102	4710.78	46.18		
Total	197	12181.68			

Mean = 51.04

Standard Deviation = 6.79

R-Square = .613

TABLE 10

Warming
Tests of Hypotheses of Repeated Measures
Using Type IV MS for Residual Error

Source	df	Type IV SS	F	p
Occasion	2	51.19	.55	n.s.
Infant Sex x Occasion	2	51.49	.56	n.s.
Parent Sex x Occasion	2	79.83	.86	n.s.
Infant Sex x Parent Sex x Occasion	2	209.12	2.26	n.s.
Occasion x Sex Role	6	54.87	.20	n.s.
Infant Sex x Occasion x Sex Role	6	246.74	.89	n.s.
Parent Sex x Occasion x Sex Role	6	421.20	1.52	n.s.
Infant Sex x Parent Sex x Occasion x Sex Role	4	36.95	.20	n.s.

Tests of Hypotheses of Crossed Effects
Using The Type IV MS for
Family Within Infant Sex x Parent Sex x Sex Role as Error Term

Infant Sex	1	51.74	.57	n.s.
Parent Sex	1	66.26	.74	n.s.
Sex Role	3	32.77	.12	n.s.
Infant Sex x Parent Sex	1	2.59	.03	n.s.
Infant Sex x Sex Role	3	328.31	1.22	n.s.
Parent Sex x Sex Role	3	199.72	.74	n.s.
Infant Sex x Parent Sex x Sex Role	2	320.51	1.78	n.s.

Summary

The analyses of the effects of sex role, sex of parent, and infant sex on two parent behaviors in three structured play situations yielded the following results. Differences in parent behavior as a function of parent sex, parent sex role, and infant sex were not found. The type of activity in which parents were involved with their infant resulted in differences in parent directing behavior, with parents directing in significantly different amounts during each of the three occasions.

CHAPTER V SUMMARY, DISCUSSION, AND CONCLUSIONS

Sex of the parent and infant has been shown to affect the manner in which parents respond to their infant, and mothers and fathers behave differently with infants based on their infant's sex, as well as the situational context of the activity (Biller, 1974; Clarke-Stewart, 1973; Lamb, 1976, 1977; Moos, 1969; Moss, 1974). No research has been conducted to determine if sex roles, independently of biological sex, have any effect on parent-infant interactions. This study was designed to investigate the effects of parent sex role, parent sex, and infant sex on two parent behaviors occurring during parents' interaction with their infant during three structured play situations.

The Sample

Thirty-three couples and their firstborn infants were selected to participate in the study. There were 20 male and 13 female infants. All families were white, middle SES, native born Americans. Mean age for fathers was 28.6 and mean age for mothers was 26.4.

Data Collection

Fathers and mothers were individually video taped interacting with their infant at infant age 31, 43, and 49 weeks in structured play situations. Two trained raters coded a total of 198 (66 for each occasion, 33 each for mothers and fathers) video taped interactions between parents and infants on the Reciprocal Category System (RCS) observational instrument. Two different parent behaviors from the RCS

were analyzed in this study: directing and warming. Hypotheses relating to parent eliciting, initiating, correcting, accepting and amplifying were omitted because the measures of these behaviors were not reliable as reliability is defined by Medley and Mitzel (1963). At 43 weeks of infant age, the Bem Sex Role Inventory (Bem, 1974) was administered to determine parent sex roles.

Analysis and Results

Data were analyzed using a $2 \times 2 \times 4$ factorial design with 3 repeated measures (Winer, 1962). The $2 \times 2 \times 4$ factorial design consisted of infant sex crossed with parent sex and parent sex crossed with levels of sex role. The activity sessions were the repeated measures. Families were nested within combinations of infant sex, parent sex and parent sex role across the 3 repeated measures. Univariate analyses of variance were calculated for each of the 2 parent behaviors: directing and warming. Duncan's multiple range tests were calculated to determine significant differences between means of dependent measures. Two hypotheses were tested in this study. Stated in the null form, they included:

1. There are no differences in parent directing behavior as a function of parent sex role, parent sex, infant sex, or type of activity.
2. There are no differences in parent warming behavior as a function of parent sex role, parent sex, infant sex, or type of activity.

Analysis of the data indicated that there were no differences in parent behavior as a function of parent sex, infant sex and parent sex role. The activity in which parents were involved with their baby resulted in differences in amounts of parent directing behavior.

Discussion

The reliability of observational measures is a function of consistency and reproducibility of measurement from one situation to the next. Medley and Mitzel (1963) define reliability as the correlation between one observer during one occasion and another observer during a different occasion. Weick (1968) noted, however, that observer agreement is the most widely used measure of reliability. Even though inter-coder agreement has been described as an inadequate index of reliability (McGaw, Wardrop, and Bunda, 1971; Medley and Mitzel, 1963; Westbury, 1967), authors continue to describe reliability solely in terms of observer agreement. This study has shown the need for researchers of developmental psychology to determine the reliability of their measures according to the definition of Medley and Mitzel (1963) before generalizing results obtained during only one setting. Sampling across occasions is needed in order to maximize generalizability of measures studied.

The lack of significant differences in parent behavior due to parent and infant sex may be attributable to a lack of reliable measures. This lack of reliability may have been due to the set of instructions given to parents prior to each task and/or to the varying difficulty of the tasks relative to infant's ability. Further research is needed to determine the sources contributing to unreliable measures. Age of the infant may also be a factor that needs to be considered in explaining the lack of stability in parent behavior.

Differences in parents' directing behavior were attributable to the type of activity. Differences in behavior may have been due to difficulty of the tasks in which parents were involved with their infants. From

observations of the infants during the three activities, project staff concluded that Occasion 5 (Hide and Seek Activity) was the easiest of the three tasks and that Occasion 6 (Blocks Activity) was the most difficult. Occasion 7 (Buttons-in-a-jar Activity) appeared to be moderately difficult. Parent behavior seems to reflect the difficulty levels of the tasks. Parents directed their infant's behavior most often during the difficult activity as would be expected. This finding demonstrates the vital need for researchers to examine the contextual situation in which behavior is occurring.

In Bem and Lenny's (1976) work, only non-verbal behaviors were observed, while in this study only verbal behaviors were studied. Ideally both types of behavior should be examined in order to assess more of the total picture of behavioral interactions that occur. Also, in Bem and Lenny's study, subjects were asked only to interact with babies in a general fashion while subjects in this study were given specific task-related instructions prior to interacting with their baby. The task instructions seem to have resulted in rather uniform behavior patterns that may have overshadowed differences that may have occurred in a more relaxed and informal setting. This needs to be further explored as, once again, the contextual situation in which behavior is occurring seems to have a major effect on behavior.

Directions for Future Research

A vast and complex network of variables seems to affect parent-infant interaction patterns. Personality traits, apart from biological sex, may affect the manner in which individuals relate to others, including their infants, but this has yet to be determined. Further study of the

original hypotheses that were eliminated from analysis due to a lack of reliability is warranted. Failure to obtain significant effects may be due to a lack of reliability measures.

Homogeneity of the sample limits generalizability of the results. Research is needed to determine if similar results would be obtained, given different racial and SES groups. There are behaviors that were not examined in this study due to a lack of reliability, as well as many other types of behavior that may be affected by parent sex, infant sex, parent sex role, or type of situation in which behavior is occurring. Verbal as well as non-verbal behaviors need to be examined. Infant behavior needs to be examined as it relates to parent behaviors. The contextual setting in which behavior is occurring also needs to be examined. Structured tasks as well as unstructured settings may have unique effects on behavior that need to be researched.

Finally, the developmental implications for the infant need to be examined. Variables that were selected in this study may affect how an infant learns to interact with his or her world. Research is needed to identify parental sex role behaviors as well as other parent behaviors that facilitate optimal infant development in order to establish an empirical base for effective parent education.

APPENDIX 1
QUESTIONNAIRE FOR PARENTS

Name: _____ Address: _____

Spouse: _____ Phone#: _____

Mother's Age: _____ Father's Age: _____

How did you hear about the project?

Doctor: _____	Friend: _____
Radio Ad: _____	Poster: _____
TV Ad: _____	Other: _____
Newspaper: _____	

What do you know about the project? (Make sure the following are covered).

- _____ Studying mother/father/child transactions (interested in way parents and their children interact).
- _____ Must be married.
- _____ In Gainesville area for one year.
- _____ Mother/father/child must come to studio in Weil Hall once every 6 weeks beginning at 13 weeks for one-half hour.
- _____ Only parents of normal firstborn children are eligible.
- _____ Child will receive free check-up at 3 months (we will pay pediatrician's bill).
- _____ At one year detailed observation of baby's mental and motor behavior.

How long to remain in area: _____ Race: _____

Occupation: _____ Spouse Occupation: _____

Education: _____ Spouse Education: _____

Any previous children: _____

Child: If born: Name: _____

Date of birth: _____ Where: _____

Sex: _____

If not: Expected date: _____

Will you sign statement: _____

Because of research design, not everyone who wants to will be able to participate. We will call back in a few days to tell you if you are eligible. If so, we will come to visit you when the baby is about 10 weeks old to gather some additional information.

APPENDIX 2
HIDE-AND-SEEK
37 WEEKS

For the very young child, out of sight is out of mind. Now he's ready to learn that things exist even when he can't see them.

Begin with a simple game using a toy and some soft covering material, such as a blanket. Attract your baby's attention to the toy and then partly hide it under the blanket so your baby can still see a part of it.

Then say, "Where did it go?" "Find the toy."

If he's puzzled and doesn't seem to know how to retrieve it, show him how. If he ignores the toy after it is hidden, play with it by yourself in front of him, but don't demand his attention or any action. He will, on his own, get interested in what you are doing.

Partly hide it again until he's able to get it himself.

Play the same game, but hide the toy completely under the soft material so he can see that something is under the blanket. Encourage him to lift it up and get his toy.

Repeat this for fun a number of times and then leave the child with both toy and blanket.

APPENDIX 3
BLOCKS
43 WEEKS

Since your child can now handle small objects with his fingers rather well, he's ready for block play. Blocks are perhaps the best of all possible toys because he can do so many things with them. Start him out with just a few.

Place two blocks in front of him while you're both sitting on the floor and show him how one can be put on top of the other. Let him do it. Then add a third so he can build a simple three-block tower. Don't worry if they're not directly one on top of the other. This is a self-correcting activity. If he doesn't build well enough, it will just tumble down. He will enjoy the tumbling as much as the building.

A variation of this is to show him how you can place two or three blocks in a line on the floor and push them around. If he pushes on the third one, the first two will go straight for a few seconds and then get out of line. He'll enjoy watching this happen, and gradually he'll gain the skill needed both to build the tower straight and keep the blocks in line.

You can also make up your own variations of block play. The main idea is to encourage him to develop his new found skills and for the parents and child to enjoy playing together.

APPENDIX 4
DROPPING BUTTONS IN JAR
49 WEEKS

The next game combines the child's muscular ability, his developing sense of the fact that objects don't disappear because they can't be seen, and his ability to respond to simple commands. They challenge him and increase not only his problem solving skill but also his sense of ability.

Take a small container, such as an empty coffee can, and make a large enough slot in the plastic top. Fix the container so that the child can easily open it to get at its contents. It should not require any ability to screw or unscrew.

Take a pile of pennies, buttons or tokens and have him watch you as you drop these in the jar through the slot.

Let him help you empty the jar and then say, "Now you fill it. See if you can get these to go in."

He may do it faster and faster, may try it with either hand; he'll invent a variety of his own ways for getting the tokens in and out of the can.

If you're watching, describe his activities out loud.

APPENDIX 5
BEM SEX ROLE INVENTORY

Your Name _____

Your Spouse's Name _____

Your Baby's Name _____

FOR PROJECT USE ONLY		
Family No. _____	Family Name _____	Order _____
Baby's Sex _____	Coder _____	Session No. _____
Deck Code _____		

On the back you will be shown a large number of personality characteristics. We would like you to use those characteristics in order to describe yourself. That is, we would like you to indicate, on a scale from 1 to 7, how true of you these various characteristics are. Please do not leave any characteristic unmarked.

Example: sly

Mark a 1 if it is NEVER OR ALMOST NEVER TRUE that you are sly.

Mark a 2 if it is USUALLY NOT TRUE that you are sly.

Mark a 3 if it is SOMETIMES BUT INFREQUENTLY TRUE that you are sly.

Mark a 4 if it is OCCASIONALLY TRUE that you are sly.

Mark a 5 if it is OFTEN TRUE that you are sly.

Mark a 6 if it is USUALLY TURE that you are sly.

Mark a 7 if it is ALWAYS OR ALMOST ALWAYS TRUE that you are sly.

Thus, if you feel it is sometimes but infrequently true that you are "sly", never or almost never true that you are "malicious", always or almost always true that you are "irresponsible", and often true that you are "carefree", then you would relate these characteristics as follows:

Sly	3	Irresponsible	7
Malicious	1	Carefree	5

DESCRIBE YOURSELF

1 1	2 1	3 1	4 1	5 1	6 1	7 1
NEVER OR ALMOST NEVER TRUE	USUALLY NOT TRUE	SOMETIMES BUT INFREQUENTLY TRUE	OCCASION- ALLY TRUE	OFTEN TRUE	USUALLY TRUE	ALWAYS OR ALMOST ALWAYS TRUE

Self reliant	
Yielding	
Helpful	
Defends own Beliefs	
Cheerful	
Moody	
Independent	
Shy	
Conscientious	
Athletic	
Affectionate	
Theatrical	
Assertive	
Flatterable	
Happy	
Strong person-ality	
Loyal	
Unpredictable	
Forceful	
Feminine	

Reliable	
Analytical	
Sympathetic	
Jealous	
Has leadership abilities	
Sensitive to the needs of others	
Truthful	
Willing to take risks	
Understanding	
Secretive	
Makes decisions easily	
Compassionate	
Sincere	
Self-sufficient	
Eager to soothe hurt feelings	
Conceited	
Dominant	
Soft-spoken	
Likable	
Masculine	

Warm	
Solemn	
Willing to take a stand	
Tender	
Friendly	
Aggressive	
Gullible	
Inefficient	
Acts as a leader	
Childlike	
Adaptable	
Individualistic	
Does not use harsh language	
Unsystematic	
Competitive	
Loves children	
Tactful	
Ambitious	
Gentle	
Conventional	

APPENDIX 6
RECIPROCAL CATEGORY SYSTEM
DESCRIPTION OF BEHAVIOR

Mother ^b		Father ^b
11	<u>WARMS</u> -Tends to reduce or release tension and/or alleviate threat. Cooing, laughing, clarifying and accepting the feelings and emotions of another are specific examples. Encourages or praises in non-task oriented behavior. Deals mainly with socioemotional climate.	21
12	<u>ACCEPTS</u> -Positively reinforces or accepts task related behavior of another.	22
13	<u>AMPLIFIES</u> -Clarification of, building on, and/or developing of actions, behaviors, comments, and/or ideas.	23
14	<u>ELICITS</u> -Asks questions or requests information about content, subject, or procedures being considered, with the intent that the other should answer and respond appropriately.	24
15	<u>INITIATES</u> -Statements of facts, information, and/or opinions and ideas concerning the content, subject, or procedures being considered which are self-initiated.	25
16	<u>DIRECTS</u> -Giving of directions, instructions, orders and/or assignments to which another is expected to reply.	26
17	<u>CORRECTS</u> -Task-related behavior which tells another that the answer or behavior of another is inappropriate or incorrect.	27

^bmust be verbal in nature

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BIOGRAPHICAL SKETCH

Jan Craig Lederman was born in Pittsburgh, Pennsylvania, on October 8, 1949. He and his family moved to Miami, Florida, in 1957. Jan graduated from Miami Coral Park Senior High School in 1967. He entered the University of Florida in September of 1967 and graduated with a Bachelor of Arts degree in 1971. In 1972, he received the Master of Education degree from the University of Florida.

Jan's professional work experience includes two years of teaching psychology at Seminole Community College from 1973-1975. Jan returned to Gainesville in 1975 and assisted in the development of Project Diversion, a federally funded effort to rehabilitate youth in trouble. Currently, he is Coordinator of Operations for Project Diversion in Alachua County, Florida.

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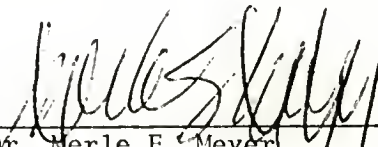
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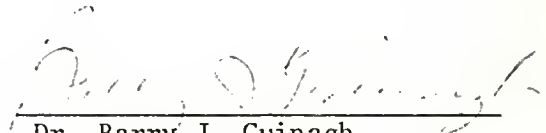
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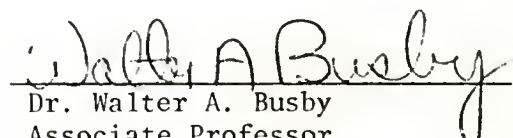


Dr. Merle E. Meyer
Professor of Psychology

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Dr. Barry J. Guinagh
Associate Professor
Foundations of Education

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Dr. Walter A. Busby
Associate Professor
Foundations of Education

This dissertation was submitted to the Graduate Faculty of the Department of Foundations of Education in the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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